

REMARKS

Entry of the foregoing and reconsideration of the application identified in caption, as amended, pursuant to and consistent with 37 C.F.R. §1.111 and in light of the remarks which follow, are respectfully requested.

By the above amendments, claims 1 and 18 have been amended to recite that the polyurethane has a shape memory function. Support for such amendment can be found in the instant specification at least at page 1, lines 4-6, and page 6, lines 23-30. Claims 1 and 18 have also been amended to delete the phrase "of not more than 30 weight percent, with respect to the overall solid content".

Claims 1-3, 7-12, 16-20 and 23 stand rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. As noted in the previous response, Applicants believe that the specification provides adequate support for the phrase "of not more than 30 weight percent, with respect to the overall solid content." While Applicants disagree with the propriety of the outstanding §112 rejection, in an effort to expedite prosecution of the present application, claims 1 and 18 have been amended to delete the subject matter objected to by the Examiner. The §112 rejection is therefore moot, and withdrawal of the rejection is respectfully requested.

In the Official Action, claims 1-3, 7-12, 16-20 and 23 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,239,213 (*Ramanathan et al.*). Withdrawal of this rejection is respectfully requested for at least the following reasons.

In the Amendment previously filed on May 27, 2008, Applicants pointed out that the process disclosed by *Ramanathan et al.*, for example, at column 2, lines 45-57, differs from the claimed process. In the outstanding Official Action, the Examiner has

asserted that the disclosure at column 5, lines 14-16 of *Ramanathan et al* "does not relate to the argued sequential reaction set forth within column 9 of the reference." Official Action at page 3. Thus, the Patent Office has taken the position that the disclosure at column 5 of *Ramanathan et al*, considered separately from the disclosure pointed out by Applicants, constitutes an anticipation of independent claim 1. Applicants respectfully but strenuously disagree with such assertion.

It is well established that "[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). For an anticipation to exist, "[t]he identical invention must be shown in as complete detail as is contained in the . . . claim." *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

In the present case, *Ramanathan et al* does not disclose heating the first mixture formed from mixing a difunctional alcohol with a difunctional isocyanate. Concerning such claimed subject matter, the Examiner has alleged that "Since sequential reaction is disclosed, the position is taken that conditions, such as heating, that promote reaction are encompassed by the disclosure." Official Action at page 3. In view of the fact that the disclosure of *Ramanathan et al* relied on by the Patent Office has no explicit mention of heating a mixture, it appears that the Examiner has taken the position that *Ramanathan et al* inherently discloses a step of heating a first mixture.

The Patent Office's burden of proof for properly alleging an inherent disclosure is well established. "To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency,

however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient." "*In re Robertson*, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999) (emphasis added). "In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent feature necessarily flows from the teachings of the applied prior art." *Ex Parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990) (emphasis in original).

In the present case, no basis in fact and/or technical reasoning has been provided by the Patent Office which establishes **with the requisite certainty** that the reaction between two components necessitates heating a mixture of such components. The mere disclosure of a sequential reaction does not constitute an inherent disclosure of heating a mixture after a first step of mixing components.

Furthermore, *Ramanathan et al* does not disclose mixing a difunctional alcohol with a difunctional isocyanate to form a first mixture, heating the first mixture, and then adding a chain extender to the heated first mixture to form a second mixture and neutralizing the second mixture, as recited in claim 1. The sequence disclosed by *Ramanathan et al* at column 5, lines 13-16, differs from such claimed order of steps. *Ramanathan et al* discloses the sequence of "reacting branched polyester polyol, an ionic group bearing organic compound and an organic diisocyanate." Col. 5, lines 13-15. By disclosing that such components can be reacted sequentially, it is clear that the sequence of reaction corresponds to the order in which the components are listed, i.e., the reaction of branched polyester polyol with an ionic group bearing organic compound, followed by the reaction of the resulting product with an organic diisocyanate. Such sequence differs from the claimed steps of mixing a difunctional

alcohol with a difunctional isocyanate to form a first mixture, and thereafter conducting steps of adding a chain extender and neutralizing a second mixture. The diisocyanate of the *Ramanathan et al* process is employed at a completely different step from the difunctional isocyanate of the claimed process.

As discussed in the instant specification at pages 5-6, while the reaction of NCO with a carboxylic group (COOH) can occur in an exemplary aspect of the claimed process, the reaction rate is generally slower than the reaction of NCO with OH in such process. This is due to the fact that, for example, the difunctional alcohol is first mixed with the difunctional isocyanate and then heated, and the chain extender is subsequently added to the heated first mixture. Accordingly to an exemplary aspect, by employing the order of steps specified in the claimed process, a polyurethane which exhibits a shape memory effect can be obtained which can be especially suitable for use, for example, as a finishing agent such as a wrinkle resistance finishing agent of textiles or garments. Quite clearly, the order in which the difunctional alcohol is mixed with the difunctional isocyanate, the resulting mixture is heated, and the chain extender is added, is quite meaningful to the polyurethane obtained from such process, and is effective to distinguish the claimed process from the process disclosed by *Ramanathan et al.*

Dependent claims 2 and 3 are further distinguishable from *Ramanathan et al.* Claim 2 recites that the first mixture is heated at a temperature of about 80 degree Celsius to about 100 degree Celsius in step b), and claim 3 recites that the first mixture is heated for about two to about five hours. As discussed above, *Ramanathan et al* does not disclose heating a first mixture formed from the mixture of a difunctional alcohol with a difunctional isocyanate. As such, it is clear that *Ramanathan et al* does

not disclose heating the first mixture at the temperature range specified in claim 2, i.e., about 80 degree Celsius to about 100 degree Celsius in step b), or for about two to about five hours as specified in claim 3.

Applicants also submit that claim 18, which is directed to a polyurethane, is not anticipated by *Ramanathan et al.* In this regard, for the reasons discussed above, *Ramanathan et al* fails to disclose the process for manufacturing the polyurethane recited in claim 18. Applicants submit that the differences in the claimed process and the process of *Ramanathan et al* result in different polyurethane products.¹ Applicants have discovered, for example, that the differences in reaction sequence can significantly impact the shape memory function of the produced polyurethane. *Ramanathan et al* has no such recognition, and merely discloses a simultaneous reaction and a sequential reaction as being suitable alternatives.

For at least the above reasons, it is apparent that *Ramanathan et al* fails to constitute an anticipation of the currently pending claims. Accordingly, withdrawal of the above rejection is respectfully requested.

From the foregoing, further and favorable action in the form of a Notice of Allowance is believed to be next in order, and such action is earnestly solicited.

¹ Attached for the Examiner's consideration is U.S. Patent No. 4,689,356 to *Peffley et al*, which illustrates that a reaction sequence can have a significant effect on the properties of the obtained polymer.

Attorney's Docket No. 1007198-000556

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If there are any questions concerning this paper or the application in general, the Examiner is invited to telephone the undersigned.

Respectfully submitted,

BUCHANAN INGERSOLL & ROONEY PC

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By: 
Roger H. Lee
Registration No. 46317

P.O. Box 1404
Alexandria, Virginia 22313-1404
(703) 836-6620